MARK MADISON: Today is March 10, 2010. I'm Mark Madison at the National Conservation Training Center, and this morning we're going to do a Podcast with Phil Pister. He's an aquatic biologist. He teaches environmental ethics out here at NCTC. He's studied wildlife biology under Starker Leopold, Aldo Leopold's son. Then he went to work for the California Department of Fish and Game in 1950. He has spent the last 60 years helping conserve our nation's fisheries. The other important thing he did, among many, was he was one of the founders of the Desert Fishes Council.

So we're very happy to have you here this morning, Phil.

PHIL PISTER: It's fun to be here.

MARK MADISON: It's great to have you.

Hey, we only have a few minutes on a Podcast, but I wonder if you might want to recount one of your more interesting conservation stories having to do with desert pupfish.

PHIL PISTER: Okay. Probably the one that comes to mind immediately is-- occurred before the Endangered Species Act was passed in the Nevada desert, a place called Devil's Hole located within Death Valley National Park, and the level of the hole there is-- there's outflows, just look into the aquifer. A little fish in there called the Devil's Hole pupfish. And that ended up in U.S. Supreme Court in one of the landmark legal decisions by the Court on who owns water under federal land... is it the state of Nevada or is it the federal government? In this case it would probably be BLM or USGS. So that was probably one of the more interesting ones.

Another one involved another pupfish just north of where I live in the Owens Valley of California. Owens Valley is a major valley that the Owens River, the major geographic significance is that it provides about 75% of the water for the City of Los

Angeles through a major aqueduct. Okay. There were a number of events in this. We were just kind of getting aboard on this in the late 1960s. I think in 1969. The whole remaining population of this Owens pupfish, same genus, different species as the Devil's Hole, was in a pond that was drying up. The only place in the world, or probably the universe, where these fish live. And we went out there late in the evening as their little pond is drying up, and in carrying the fish back to a pickup truck with aerating devices in it to take them over to a more secure spring, at one time I held the entire world population of a species in two buckets, one in either hand. And I guess I was impressed then about how fragile and how on the edge certain of these things are. And so that kind of changed my whole philosophy on fish and wildlife management, as there are important things to do and less important things to do. Usually the less popular they are, the more important they are. That's the way things go.

So those would be the two major-- well, I shouldn't say major-- there are all kinds of them-- things that I did. In other words, we were just talking about, Mark, the restoration of the California golden trout, California's state fish, which was nearly wiped out by an invasion of brown trout. Curiously, the remedial actions involved removing the brown trout but building huge barriers across the south fork of the Kern River to prevent reinvasion. And so after so many years, started that in the mid-'60s, probably still going on. Now it's in the hands-- we got the brown trout out. It's in the hands of the geneticists now looking at the DNA, microsatellite DNA analyses of the different golden trout populations, and they're scratching their heads over whether some of the alleles, part of the genetic structure of these fish, are result of hybridization with rainbow trout or are they part of the evolution of the golden trout, which are very

recently evolved that from. So we're leaving that up to the geneticists.

At this point I'm reminded of a great statement by my colleague and friend Bob Banky at Colorado State University. He said, "You know, Phil, I keep a big jug of whiskey under my desk just awaiting the next phone call from a fish geneticist."

MARK MADISON: (laughing)

PHIL PISTER: So you know when you hear from them, it's going to change what you were thinking.

But these are great people, geneticists are. They're giving insight into fish we never had before, nor would we have without them.

MARK MADISON: And genetic analysis of species is one huge change you've seen in the last 60 years. Are there some other that sort of struck you?

PHIL PISTER: Well, see, back then, back, say, in the early '50s, I finished up my graduate work at Berkeley in 1953, and at that time the fish taxonomists, the people that classify fishes, they used what we call morphology and morphometrics, how many scales in the lateral line of these fish, you know, and oprical confirmation, and things of this nature. And since-- that was kind of a rough way, but pretty accurate. The people who did this are very exacting people. All statistically valid. And they separated the species and genera from that. Now, it's pretty much all in the hands of geneticists. They take what's been done by the classical taxonomists in the last, say, 10 years and putting in their own input now. And that's what you find at major universities. You have of the department of zoology and the department of integrated biology where the geneticists-- integrated biologists are the ones who do this.

Fisheries might seem kind of dull to the average person, but it's a dynamic and fascinating thing. Of course, I guess it's easy to become very fascinated with

something that's highly esoteric that you yourself appreciate and hope others do, too.

MARK MADISON: Why do you have such a passion for fish? I've never asked you this before.

PHIL PISTER: Well, I don't know if it's fish, per se, Mark, but for endangered creatures. And it comes back again, we mentioned last night in the evening seminar, when people ask me what good they are, separates right away from the biocentrists, those who are concerned over the biota of a system, from the anthropocentrists, who look at this as a means of commodity production. So I'm strongly the biocentrist, realizing ultimately everything will-- is biocentrically oriented, and the anthropocentrists come in, "What's best, what can we make the money off of," and so on.

MARK MADISON: Very good. You've been out here. You've taught in our New Employees Course. You've taught in our Fisheries Academy. You've given public lectures and distance broadcasts. You're doing one this afternoon that will air at 1:00. What are some of the briefer lessons you give our students in environmental ethics?

PHIL PISTER: Well, to me, and my job with California Fish and Game for many, many, many years, was my charge was to do what I could do as a trained biologist to maintain the biological integrity of these waters. We have about a thousand waters there in my part of California, extending from the top of Mt. Whitney at 14,496 feet, zoom, down to Death Valley below sea level. All these, really, rather remarkable habitats. And so in all of the things that I've had to do there, much of it falling under the National Environmental Policy Act and California Environmental Quality Act, that's just, how can I make a judgment on something whether it's going to be acceptable or not? And I came back to my-- probably my major mentor through his son Starker, Aldo Leopold. Said, "The thing is right when it tends to preserve the integrity, stability and

beauty of the biotic community." That's part A. It's wrong when it tends otherwise. So you look at this project, and with your knowledge and background habitat integrity, you take that, then, and ask the question: Does this project support beauty, integrity and stability of the biotic community? And it if does, fine, you do this. If it doesn't, you're kind of like in a bar fight... you grab the nearest beer bottle and break it off and start swinging, you know, because you realize that these resources that are irreplaceable, they're in your hands and they're in no one else's hands. So that to me-- and, of course, I've been retired now for some time, but people coming along behind me have that same compulsion, that same ethic.

MARK MADISON: Great. That's good succinct words to live by. One last question, Phil, to close out the Podcast. You've been doing conservation biology, like I mentioned, for 60 years.

PHIL PISTER: Yeah.

MARK MADISON: We have a lot of young people, many of whom you teach here at NCTC, entering the field. Do you have any advice for them?

PHIL PISTER: Yeah, very succinctly... develop a good and keep a good sense of humor, because virtually-- even things that look impossible, there's a humorous aspect to that. If nothing else, it's much easier to live with these things if you can look at them from a tongue-in-cheek perspective, and that has been helpful to me. In fact, sometimes I probably carry that too far.

MARK MADISON: No, I wouldn't go that far. Phil, thank you so much.

PHIL PISTER: You're welcome, Mark.

MARK MADISON: Once again, you've been listening to a Podcast with Phil Pister, a California aquatic biologist, one of the founders of the Desert Fishes Council,

and an instructor out here at the National Conservation Training Center. Thank you so much for listening.